

WHAT IS CLAIMED IS:

1. An insertion tube for an inspection device comprising:
 - a helically wound spiral tube;
 - a first braided tube disposed at least partially over said helically wound spiral tube;
 - a second braided tube disposed at least partially over said first braided tube;
 - a first polymeric layer disposed between said first braided tube and said second braided tube, and
 - a second polymeric layer coating the outer periphery of said second braided tube.
2. The insertion tube for an inspection device of claim 1 wherein said first braided tube includes a wire braid having a braid angle of about 45 degrees relative to the longitudinal axis of said first braided tube.
3. The insertion tube for an inspection device of claim 1 wherein said first braided tube includes a wire braid having a braid angle of less than about 45 degrees relative to the longitudinal axis of said first braided tube.
4. The insertion tube for an inspection device of claim 3 wherein said second braided tube includes a wire braid having a braid angle of about 45 degrees relative to the longitudinal axis of said second braided tube.
5. The insertion tube for an inspection device of claim 1 wherein said second braided tube includes a wire braid having a braid angle of greater than about 45 degrees relative to the longitudinal axis of said second braided tube.
6. The insertion tube for an inspection device of claim 1 wherein said first braided tube includes a wire braid having a braid angle that varies along the length of said wire braid.
7. The insertion tube for an inspection device of claim 6 wherein said second braided tube includes a wire braid having a braid angle of about 45 degrees relative to the longitudinal axis of said second braided tube.

8. The insertion tube for an inspection device of claim 6 wherein said second braided tube includes a wire braid having a braid angle greater than about 45 degrees relative to the longitudinal axis of said second braided tube.

9. The insertion tube for an inspection device of claim 1 wherein said first braided tube includes a plurality of stainless steel wires.

10. An insertion tube for an inspection device comprising:
a helically wound spiral tube;
a first wire braided tube disposed about said helically wound spiral tube, said first wire braided tube having a first braid angle;
a second wire braided tube disposed about said first wire braided tube, said second wire braided tube having a second braid angle;
a first polymeric layer disposed between said first wire braided tube and said second wire braided tube, and
a polymeric coating covering said second wire braid tube;
wherein said first braid angle is less than said second braid angle.

11. The insertion tube for an inspection device of claim 10 wherein said first wire braid tube includes at least a first plurality of wire groups.

12. The insertion tube for an inspection device of claim 11, wherein said second wire braid tube includes a second plurality of wire groups.

13. The insertion tube for an inspection device of claim 12, wherein each wire group of said first plurality of wire groups includes at least three wires.

14. The insertion tube for an inspection device of claim 12, wherein each wire group of said second plurality of wire groups includes at least four wires.

15. The insertion tube for an inspection device of claim 10, wherein said second braid angle is about 45 degrees relative to the longitudinal axis of said second braided tube.

16. The insertion tube for an inspection device of claim 10, wherein said second braid angle is greater than about 45 degrees relative to the longitudinal axis of said second braided tube.
17. The insertion tube for an inspection device of claim 10, wherein said first wire braid tube includes a plurality of stainless steel wires.
18. The insertion tube for an inspection device of claim 10, wherein said second wire braid tube includes a plurality of tungsten wires.
19. The insertion tube for an inspection device of claim 10, wherein said polymeric coating includes a polyurethane having about a Shore 85A durometer.
20. The insertion tube for an inspection device of claim 10, wherein said first braid angle varies from about 15 degrees to about 45 degrees over the length of said first wire braid tube.
21. The insertion tube for an inspection device of claim 10, wherein said first polymeric layer includes a polyurethane having about a Shore 80A durometer.
22. An insertion tube for an inspection device comprising:
 - a resilient helical coil member configured to allow a predetermined amount of elastic deformation;
 - a first resilient braided member, said first resilient braided member defining a first interior volume, wherein said resilient helical coil member is disposed within said first interior volume, said first resilient braided member having a polymeric coating disposed on the outer surface thereof;
 - a second resilient braided member, said second resilient braided member defining a second interior volume, wherein said first resilient braided member is disposed within said second interior volume; and
 - a resilient coating disposed about the exterior of said second resilient braided member.

23. A method for making a insertion tube for an inspection device comprising the steps of:

- providing a helical coil member;
- placing a first braid over at least a portion of the helical coil member, the first braid having a first braid angle;
- depositing a first polymeric layer on an outer peripheral surface of the first braid;
- placing a second braid over at least a portion of the first braid, the second braid having a second braid angle; and
- depositing a second polymeric layer on an outer peripheral surface of the second braid;

wherein the first braid angle is different from the second braid angle.

24. An inspection device comprising:

- a viewer;
- an elongate flexible member having a proximate end and a distal end, the proximate end coupled to the viewer, the elongate flexible member including:
 - a resilient helical coil member configured to allow a predetermined amount of elastic deformation;
 - a first resilient braided member, the first resilient braided member defining a first interior volume, wherein the resilient helical coil member is disposed within the first interior volume, the first resilient braided member having a polymeric coating disposed on the outer surface thereof;
 - a second resilient braided member, the second resilient braided member defining a second interior volume, wherein the first resilient braided member is disposed within the second interior volume; and
 - a resilient coating disposed about the exterior of the second resilient braided member; and
- an imaging optical system disposed at the distal end of the elongate flexible member, the imaging optical system in communication with the viewer and further including a light source configured to illuminate a target area.

25. The inspection device of claim 24, wherein the viewer includes a display.

26. The inspection device of claim 25, wherein the imaging module includes a CCD imager.